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THE ELEMENTARY SCHOOL TEACHER

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EDUCATIONAL NEWS AND EDITORIAL COMMENT

Meeting of the Department of Superintendence

The Department of Superintendence of the National Education Association will meet in Richmond, Virginia, February 23–28, 1914. A preliminary program has been sent out, from which the following general account of the character of the meetings has been compiled.

Three committees are scheduled to report to the meeting. The subjects of the reports are "Economy of Time in Education," "Health Problems of the American Public School," and "Standards and Tests of Efficiency." Rural-school problems occupy a prominent place in the program, two sessions being given over to this subject. A report is to be presented upon it by the United States Bureau of Education, and Mr. John H. Finley, commissioner of education in New York, will present a discussion of the rural schools in that state. Vocational training also occupies a prominent position. One session upon part-time, continuation, shop, and trade schools is to be held, and the relation between vocational and cultural education is the subject of discussion of another session. There are, as usual, a number of papers on various subjects by prominent educators, and the group of round tables for superintendents of the various sorts of administrative unit.

Besides the National Society for the Study of Education and the Society of College Teachers of Education, which are announced below, the following associations will meet with the Department of Superintendence: National Committee on Agricultural Education; Educational Press Association of America; National Council

of Teachers of English; conferences of state superintendents of education and of teachers of education in state universities with Commissioner Claxton; conference of teachers in city training schools; American School Peace League; International Kindergarten Union; National Congress of Mothers and Parent-Teacher Association; School Garden Association of America; National Association of Collegiate Registrars.

F. N. F.

The following is an announcement of a tentative program for the meeting of the Society of College Teachers of Education, to be held in conjunction with the meeting of the Department of Superintendence in Richmond, Virginia, in February, 1914.

I. Session Devoted to Report of Committee on Rating, Placing, and Promotion of Teachers.
   1. "The Rating, Placing, and Promotion of Teachers; Introduction," Frank E. Thompson, University of Colorado, Chairman.
   2. "The Rating of Prospective Teachers," William H. Kilpatrick, Columbia University.
   3. "The Rating of Teachers in Service," Lotus D. Coffman, University of Illinois.
   4. "The Placing of New Teachers," A. S. Whitney, University of Michigan.
   5. "The Promotion of Teachers," Ellwood P. Cubberley, Stanford University.
   6. "A Plan for Co-operation between States or Sections for the Placing and Promotion of Teachers," Edward C. Elliott, University of Wisconsin, and W. S. Sutton, University of Texas.
   7. "The Advantages of a State Teachers' Agency," George P. James, University of Minnesota.
   8. "Plans for the Betterment of Conditions," the Committee.

NOTE.—These papers will appear in the *Yearbook* and will be discussed at the first session.

II. Luncheon.

III. Session Devoted to Educational Surveys and Business Meeting.
   1. "The Significance of City School Surveys for Departments of Education in Colleges and Universities," Paul H. Hanus, Harvard University.
   2. "The Significance of State Educational Surveys for Departments of Education in Colleges and Universities," M. B. Hillegas, Columbia University.

NOTE.—These papers will appear in the *Yearbook* and will be discussed at the second session.

IV. Bibliography on School Surveys.
G. D. Strayer, Columbia University. This will be printed in the *Yearbook*.

V. Classified List of Educational Investigations now under way by Members or their Students.
Compiled by the Secretary. This will be printed in the *Yearbook*.

VI. Report of the Committee on Rating of Normal Schools in Relation to Departments of Education in Colleges and Universities.
Chairman, W. A. Jessup, Iowa State University.

This committee will report at the second session on a definite plan for concentrating the work of the Society for the 1915 meeting on the investigation of this problem.

The final program and full details of the time and place of the meetings will be sent later.

CARTER ALEXANDER, *Secretary-Treasurer*

PEABODY COLLEGE FOR TEACHERS
NASHVILLE, TENNESSEE

The annual meeting of the National Society for the Study of Education will be held in connection with the sessions of the Superintendents' Section of the National Education Association, in Richmond, Virginia, on Monday, February 23, at 8:00 P.M. The program will consist of discussions of the *Yearbook*, which will be organized as follows:

GENERAL TOPIC: "SOME PROBLEMS IN HIGH-SCHOOL INSTRUCTION."

1. "Reconstructed Mathematics as an Example of the Adaptation of Instruction to the Needs, Interests, and Capacities of High-School Students," by H. C. Morrison, superintendent of public instruction for New Hampshire.
2. "Supervised Study as a Means of Providing Supplementary Individual Instruction," by E. R. Breslich of the University High School, the University of Chicago.
3. "The Character of the Teaching Population as Influencing the Possibility of Improved Instruction," by L. D. Coffman, professor of education, the University of Illinois, and W. A. Jessup, professor of education, the University of Iowa.

The *Yearbook* will be distributed about February 1.

S. C. PARKER, *Secretary*

UNIVERSITY OF CHICAGO

"Vocational" Branches in Teacher Training in Maine

In recent discussions regarding state-aided vocational education little has been said about the progress of the work in Maine. The fact should not be overlooked that here is a state which has been working at the most important phase of the problem, namely, the preparation of teachers who understand the vocational conditions obtaining in their own state and who are prepared to meet those conditions. State Superintendent Smith, in speaking on this point, says:

> No teacher can now graduate from any state training or normal school without having studied the elements of agriculture, and without having taken courses in manual training and housekeeping. This year nearly eight hundred young persons are in the normal schools getting ready to teach school. Every one of them before he goes to a school of his own will understand the underlying principles of these subjects, and many of them will be sufficiently expert to take full direction of special courses. Every year there will be added to our teaching force those who can teach through the work of the hand as well as through the words of the book.

Vocational Training in Corporation Schools

The meeting of the National Association of Corporation Schools at Dayton, Ohio, is not without its significance in the field of public education. No amount of discussion can determine the extent to which the public industrial school can give efficient trade preparation, but these corporation schools will unquestionably help in fixing standards and in defining limits within which the public school may legitimately work. There are certain types of technical training which the corporation schools can give better than the public school, and in this training the public school should not compete. This will not relieve the public school of its duty to provide genuine vocational training but will make its problem clearer and more specific. F. M. L.

Credit for Outside Work

Experiments in which credit has been given by the school for work done outside the school have been reported in recent numbers of the *School Review*. In one case credit was given for music lessons and for time spent in practice. In the other case a Minnesota superintendent gave credit for a great variety of home work, from milking a cow to sleeping with the windows open. *School Progress* reports an experiment

similar to the one last mentioned which was carried on for two years by Mr. A. I. O'Reilly at Spring Valley, Oregon. The general nature of the plan may be seen from the following quotation:

> The plan worked out by Mr. O'Reilly was in the form of a contest, a certain number of minutes being allowed for specified duties discharged at home, and the six children earning the greatest number of minutes at the close of the school year receiving prizes. The prizes were cash furnished by the school board and consisted of $3 each for the three pupils earning the highest number of credits, and $2 each for the three children having the next highest. This money was placed in the savings bank to the credit of the pupils winning it.
>
> Each morning the children brought signed statements from their parents itemizing work done, and each morning Mr. O'Reilly carefully registered these items. Although no pupil was obliged to enter the contest, all did so eagerly; even the little tots proudly presented their notes each morning, and happily told Mr. O'Reilly how they had fed the chickens, watered the flowers, cleaned their teeth, slept with the window board in, and so on.
>
> Perhaps the most unique thing about the list of duties for which Mr. O'Reilly offered credit was his original method of obtaining personal neatness and sanitation. For instance, thirty minutes were allowed children for each bath; ten minutes for reaching school with clean hands, face, teeth, and nails, and with hair combed; ten minutes for washing teeth; five minutes for sleeping with window board in, and five minutes for retiring at or before nine o'clock.

The plan is reported to have been attended with success if the enthusiasm of the people of the district and of a wider circle of observers may be taken as a test. At the close of the year a picnic was held at which the prizes were distributed and addresses were delivered by the state superintendent of schools, who first suggested the experiment, and by the governor of the state. A similar project is being carried on in the Junction City High School, where the credit takes the form of exemption from the final examination, provided an average grade of 85 per cent in class work has been maintained.

Doubtful Propriety of This Practice

The popular acclaim with which such practices are rewarded makes it likely that they will become more widespread and it is therefore worth while to consider how far they may be regarded as legitimate forms of school endeavor. It is a familiar fact that the modern home, especially in the city, is not equipped to furnish the child the same opportunity for doing tasks which have educative value that the home of a generation or more ago offered. It is pretty

generally admitted that the school should accept as part of its duty the responsibility of making good this lack to the child. The cases here described, however, do not come under this principle. The opportunities for work exist in the home, and the school seeks to induce the child to perform his legitimate home tasks by offering rewards, which sometimes take the form of exemption from school duties which would otherwise be required. That the school should cultivate closer relations with the home may be freely granted. Further, it may be conceded that the school should use its influence to induce the child to perform his duties, whether at home or elsewhere; but that the school should relieve the parent of the responsibility of directing the conduct of his child at home, unless indeed conditions such as are found in city slums render it difficult for the parent to supervise the conduct of his child, or the parent is incompetent, is to be questioned. Where changed conditions have not made it necessary, it may be doubted whether it is desirable for the school to encroach upon the authority and responsibility of the home.

School Credit for Sunday-School Work

A different principle underlies the plan which has been proposed in a resolution adopted by the recent convention of the Colorado State Teachers' Association as reported in the *Pueblo Chieftain*. After dwelling upon the need of religious training, on the strong organization which has this as its aim, and of the unstandardized nature of Sunday-school work, the resolution reads:

> We therefore recommend that this Association approve of the strong effort now being made by the churches and the Colorado Sunday-School Association to elevate the standards of teaching in the Sunday schools, to improve their courses of study, and to secure on the part of the pupils the same grade of lesson preparation work as is demanded in public-school work; that with this object in view, it commends to the Sunday school for classes of high-school grade the recognized standards of the North Central Association of Secondary Schools and Colleges; that when these standards have been attained it recommends that high schools give credit for Bible-study of corresponding grade in the Sunday schools, to an extent not to exceed one-fourth unit for each year's work; and that this body appoint a permanent committee to co-operate in prudent and legitimate ways for all the foregoing purposes with a similar committee from the Colorado School Association.

The proposal which is here made merits thoughtful consideration. The details of such a plan, including the amount of credit

to be allowed, would need to be fully discussed. To those who believe that religious instruction is not a legitimate form of public concern, and to those at the opposite extreme who believe that it is so much a matter of public concern that it ought not to be delegated but should be given to all pupils together and in the same form, the proposal will not commend itself. In those inclined to a compromise position, on the other hand, it may awaken interest. It has the advantage that it would be likely to raise the standard of Sunday-school work and it seems probable that the better character of the work offered, together with the credit which would be obtained, would attract a number of the young people who now drop out of the Sunday school. If some school system should adopt the plan as an experiment, the result would be watched with interest.

The Training of Teachers of the Manual and Industrial Arts

A group of ten men recently met at the Bradley Polytechnic Institute, Peoria, Illinois, in an informal three-day conference on questions relative to the training of teachers of the manual and industrial arts. These men were heads of manual arts departments in as many state normal schools, colleges, or universities located in the following states: Ohio, Tennessee, Indiana, Illinois, Wisconsin, Iowa, and Missouri.

The conference discussed in considerable detail the content and organization of a four-year training course of college grade for teachers of the manual arts. While it was agreed that the four-year course is highly desirable, it was commonly accepted as inevitable that the great demand for manual-training teachers would render the two-year course both popular and necessary. Consequently the conference decided upon desirable standard requirements for such a training course. In working out these requirements, due regard was had for the fact that such a course should afford sufficient technical and professional work to render the graduate immediately efficient in certain types of schools and, at the same time, should serve as good foundation for further collegiate work leading to a degree.

A session was given to a discussion of the best means of meeting

the insistent call for teachers equipped to give instruction in the new vocational schools. In most of the states represented, legislation of some kind has stimulated the introduction of vocational work and this influence is already felt in the teachers' training classes.

Perhaps the most important question discussed was how the educational institutions represented could best make known to suitable young men what excellent opportunities were offered to well-trained manual arts teachers by this new and growing demand. The testimony of all present was to the effect that this demand far exceeded the supply from all available sources. So valuable did the conference prove that it was decided to hold a meeting next year at the University of Chicago.

Provision for Childen Retarded Because of Remediable Physical Defect

There are many signs that school boards and school administrators are attacking the problem of the discovery and treatment of defective children in the schools. In Louisville, Kentucky, the public-school system is taking over a school for defective children which was started a year ago under private auspices. The *Louisville Herald* gives the following account of the situation:

The special school for retarded children which will be opened at the Second and Gray Street school next week, will be the continuation of the work begun last year at Cathedral House, under the auspices of the Cathedral House Guild.

The Board of Education is enabled, by the indorsement of the school bond issue, to take up the cases which come to it demanding special training. A trained teacher will be employed, and the work will be conducted according to the best methods.

The special school was opened last November at the Cathedral House. Only those children were taken into the school who had a physical defect which could be improved by proper medical and surgical attention. For this reason it was necessary that every child undergo a physical examination. Four general clinics were held at the Cathedral House.

The children of this school, "marred in the making," have been tremendously helped by the school. After their lunch at 9:30 in the morning and after dinner, a tooth-brush drill was given. Then they rested for half an hour in the reclining chairs on the roof garden. Before they went home there was another period of work and play. A printed form was kept for every child and duplicates were made for the public school, the city health office, and the

mental examiner, Dr. Trawick. This record gives a complete history of the case, and the children are still being visited in order to keep the data up to date.

Centers for the Care and Teaching of Epileptic Pupils and Crippled Children

Whether the purpose which is declared in the following quotation from the *Chicago Tribune* will be authorized by the Board of Education of Chicago remains to be seen, but in any case it is one which cannot fail to be regarded as entirely worthy of approval.

The epileptic children of Chicago will be taken care of by the board of education as far as the school laws will permit. Mrs. Ella Flagg Young, superintendent of schools, will open centers for epileptic children at a number of schools. It is expected that all will be ready by January 1, and part of them probably will be started before the Christmas vacation.

The rooms, according to Mrs. Young's idea, will be in charge of a teacher who is to be paid a somewhat higher salary than the regular grade teacher. The rooms will be ungraded, as the subnormal rooms, and the children will receive individual instruction.

Each center will have one or two couches and screens, so that children who are overcome during school hours can be taken care of away from the rest of the children. Mrs. Young has had a number of urgent requests from parents of epileptic children asking that the school board do something, and a number of cases have come to her personal attention.

"From time to time children come to the office," she said, "who necessarily are sent out of the schools because they are afflicted with epilepsy. There ought to be some provision for them. I expect it will be difficult to get teachers for the rooms, although the salary will be greater. One of the district superintendents will be in charge of the rooms. The district superintendent and the teachers will be given instruction in the proper method of handling epileptic children."

We learn also from the *Milwaukee Sentinel* of the opening of a school in Milwaukee for crippled children:

"The school for crippled children, Scott Street and Sixth Avenue, will open in about two weeks," said Acting Superintendent of Schools, A. E. Kagel, on Sunday.

The committee of finance of the Board of Education, at its meeting last Tuesday, appropriated money for the purchase of an automobile, for the renovating of the rooms, and for the hiring of a matron and chauffeur, who will have the care of the unfortunates in, from, and to the school. The automobile will cost about $800 and the funds necessary to clean and paint the new school, which is one of only a few similar in the United States, will be about $125.

A New School for Defectives Planned for Detroit

Superintendent Chadsey, of Detroit, according to a notice in the *Detroit Free Press*, plans to ask the legislature for an appropriation for a new school exclusively for the training of defective children. This is a more elaborate provision than is commonly made by even large city systems, and from the point of view of efficiency in studying and handling cases of atypical children, at least, the centralization of the work in a well-equipped building instead of trying to deal with the defective children in single rooms scattered throughout the various schools is an experiment worth trying. It would call attention to the magnitude and seriousness of the problem and make it more likely that specially trained experts, with equipment particularly suited to their task, would be employed. The notice follows:

> Declaring that a school for backward and subnormal children is needed in Detroit, Dr. C. E. Chadsey, superintendent of public schools, Judge Hulbert, of the Probate Court, and Frank Cody, head of the special training classes and social center work, will endeavor to have a state law passed granting the city the right to establish such a municipal school.
>
> Detroit school officials say that time is ripe to build a special school, at a cost not to exceed $100,000, where such children may be educated and trained along special lines.
>
> Mr. Cody declares he has found that many children, after a year in these special classes, respond to special training and treatment, and fit themselves to enter on the work in regular school grades with normal pupils.
>
> "We need a municipal or county school in Detroit, for the children we are now handling in special classes," said Mr. Cody. "These subnormal children must be taught in classes where special courses are arranged to fit each individual case, or set of cases."

F. N. F.

State Textbooks

Should a state publish its own books? California raised the question a number of years ago and has been trying to settle it ever since. During the first nine months of 1913, this state published 1,231,681 volumes of school texts. Since the California books are published from plates used by textbook companies which print books for other states, it is possible to compare relative costs of the two plans in connection with the same books. If these books had been purchased from the book companies at the list price to dealers, they would have cost the

state $485,169.84, according to W. G. Eggleston, writing in *The Public*. The cost of manufacturing at the state plant, plus royalties, was $219,681.95, a saving to the state of $265,487.89. The book company's price for the fifth reader, he tells us, is 75 cents. California's printing plant manufactures it for 15.2 cents and pays a royalty of 9 cents, making a total cost of 24.2 cents a copy. The total cost of manufacturing the introductory history is 30.5 cents, while the company's retail price is 60 cents.

It must be remembered that the company's price is for the book delivered into the hands of the pupil; therefore the costs of distribution and perhaps other costs should be added to the state cost. Nothing is said as to the relative quality of the paper used in the state books, or of the press work and binding. Before one can make secure judgment as to relative success of such state publication, one must have certain fundamental *facts*.

An act of the last legislature in Kansas provides that the state, beginning with 1914, publish and distribute all common-school textbooks. The new printing plant will be ready for work by March. The first book to be published will be the Kansas primer. This was selected from among an offering of eighty manuscripts from Kansas teachers. They are attempting to secure all manuscripts from their own teachers, a feature of the plan that in California proved a distinct failure.

A compromise suggestion comes from the province of Ontario. In this province the school authorities draw up the manuscripts of books that they wish to have for their schools, and also plans and specifications for the finished books. Independent publishing houses are then asked to bid for the publishing contract, which is awarded to the lowest responsible bidder. The school authorities claim a saving of about 50 per cent on the cost of the books. Not so often is it mentioned that the successful bidder carries on a mail-order business and is willing to bid very low in order to secure the additional favor of running some advertising matter in the school books.

J. F. B.

LITERARY SELECTIONS MOST FREQUENTLY MEMORIZED IN THE ELEMENTARY SCHOOL[1]

LEWIS ATHERTON
Educational Adviser, Swift & Company, Chicago

The course of study for the elementary schools of New York City provides that "at least four lines of poetry per week, or an equivalent amount of prose, should be memorized by every pupil" during the first four grades. For the fifth and sixth grades, the amount is placed at six lines per week; and for the seventh and eighth grades, at eight lines per week. The total thus prescribed for the entire elementary school course is the quite considerable amount of 1,720 lines. This is more than 100 poems of sixteen lines each. Very many cities require, or at least recommend, similar amounts.

Where so much is prescribed, it is important that selections be made with care. The present writer is of the opinion that, in this field at least, the things that have stood the test of successful practical experience in many cities are the ones that can be chosen with the greatest confidence. In the nation-wide experimentation that is now going on, selections that are best adapted to needs and interests of children of the different ages tend, after trial, to keep their place, and to become established; inappropriate selections naturally tend to disappear. The present study was undertaken for the purpose of finding out what memory materials have stood the test of practical experience in our various cities and states.

About 125 state and city courses of study were examined. It was found, however, that but one out of every four published courses yields material upon this point in sufficiently definite form to be available for the purposes of this study. Thirty-four courses were found in which recommendations and prescriptions were intelligible,

[1] This is the report of an investigation which was made in connection with the course on the curriculum conducted by Assistant Professor J. F. Bobbitt, in the University of Chicago.

and apparently fairly complete. These were the courses used in the following cities and states:

Cities:

New York City	Berkeley	Evansville	Paterson
Chicago	Beloit	Jersey City	Schenectady
Boston	Brookline	Johnstown	South Bend
Cincinnati	Columbia	McKeesport	Williamsport
Minneapolis	Dayton	Nashua	Worcester
Washington City	Decatur, Ill.	Oakland	
Tacoma	Detroit	Omaha	

State and county courses:

New York	Massachusetts	Idaho	Tennessee
California	Pennsylvania	Maine	Baltimore County

A very complete list of memory materials was found recommended in Hosic's *Elementary Course in English.* Since this was developed in connection with the practical work of the training classes of the Chicago Teachers College, his recommendations have been included in the tabulations.

With Granger's *Index to Poetry and Recitations* taken as authority upon the verse-portion —this makes up 99 per cent of the entire list—it was found that many errors in exact title and more mistakes in assignment of titles to authors occur in the several courses of study used. While the entire elimination of these and other errors from the list of authors and titles is extremely improbable, much has been corrected. It is very difficult to trace down each error and know exactly where it arose, and how it crept into its present place. Wherever there has arisen a question regarding any selection in this study, a safe course has been followed, and the study eliminated from the list. This procedure cut the list of titles found in the thirty-four published courses from 1,050 to 834 titles. And further, for the sake of brevity in publishing the gist of the results of the study in this journal, it has been thought well to eliminate from the list all titles appearing less than three times. There remain, after the two prunings, 140 authors and 382 titles. It is believed that the list as it now stands indicates in a general way the relative valuations placed upon these 382 titles by the practical workers in the field.

TABLE I

Material for Memorization

Author	Title	1	2	3
Addison, J.	Spacious Firmament on High, The	10	8	6–8
Alden, R. M.	Lost, The Summer	3	.....	1–4
Aldrich, T. B.	Before the Rain	11	6	2–6
	Marjorie's Almanac	12	3	3–4
Alexander, Mrs. C. T.	All Things Bright and Beautiful	15	1	1–2
	Burial of Moses	6	.....	6–7
Allingham, W.	Fairies, The	10	2	2–4
	Robin Redbreast	8	2	1–2
	Wishing	10	3	2–4
Allison, Joy	I Love You, Mother	3	2	1–2
Arnold, M.	Self-Dependence	4	8	7–8
Bates, Mrs. C.	Who Likes the Rain?	3	1	.....
Bennett, H.	The Flag Goes By	19	6	1–7
Bible, The	Psalm 1	4	4	3–4
	Psalm 23	10	3	2–5
	Psalm 24	5	3	1–5
Bjornson, B.	Tree, The	18	3	1–5
Blake, W.	Lamb, The	8	.....	1–5
	Nurse's Song	4	3	1–3
	Tiger, Tiger, Burning Bright	3	5	2–5
Bland, Mrs. E. N.	Baby Seed Song	4	2	2–3
Boyle, Mrs. Sarah	Voice of the Grass	4	3	3–5
Branch, Mrs. M. L.	Petrified Fern	3	6	.....
Brooks, Rev. P.	Christmas Everywhere	4	7	3–7
	O Little Town of Bethlehem	13	3	2–6
Brown, K. L.	Little Plant Seed, The	11	1	1–3
Browning, R.	Herve Riel	3	8	7–8
	Home Thoughts from Abroad	6	7	4–7
	How They Brought the Good News	7	6	6–8
	Incident of the French Camp	9	5	5–8
	Pied Piper of Hamelin	7	3	1–7
	Pippa Passes	8	4	3–7
	Pheidippides	3	.....	6–8
	Year's at the Spring	15	5	1–7
Browning, Mrs. R.	Child's Thought of God	9	4	1–4
	Romance of the Swan's Nest	3	7	.....
Bryant, W. C.	Antiquity of Freedom	5	8	7–8
	Death of the Flowers, The	7	7	5–8
	Gladness of Nature	13	5	3–8
	Hurricane	3	6	6–7
	Hymn to North Star	4	8	.....
	Love of God	3	8	.....
	March	7	.....	2–8
	Planting of the Apple Tree	18	5	2–8
	Robert o' Lincoln	22	5	1–8
	Song of Marion's Men	12	6	4–7
	Thanatopsis	12	8	7–8
	To a Water Fowl	20	7	6–8
	Yellow Violet	6	5	5–6
Bunner, H. C.	One, Two, Three	9	2	2–4
Burns, R.	Auld Lang Syne	4	8	6–8
	Bannockburn	5	7	5–8
	Field Mouse, To a	3	.....	2–8

TABLE I—*Continued*

Author	Title	1	2	3
Burns, R. (*cont.*)	Man's a Man for a' That	13	6	6–8
	My Heart's in the Highlands	6	5	5–7
	Mountain Daisy, To a	4	.....	5–8
Byron, Lord	Destruction of Sennacherib	7	6	6–8
	Ocean	6	8	6–8
	Waterloo	7	.....	5–8
Campbell, T	Hohenlinden	6	.....	5–7
	Lord Ullin's Daughter	3	6	.....
Carlyle, T	Today	21	5	2–7
Cary, Alice	Nobility	12	6	4–7
	November	15	3	1–4
	Order for a Picture, An	5	.....	4–8
	Three Little Bugs in a Basket	6	.....	1–4
Cary, Phoebe	Don't Give Up	6	3	2–3
	Suppose	15	2	1–4
	They Didn't Think	5	1	1–3
Child, Mrs. L. M.	If Ever I See	3	3	1–3
	Thanksgiving Day	15	2	1–3
	Who Stole the Bird's Nest?	9	2	1–3
Coleridge, S. T.	Answer to a Child's Question	10	2	2–4
	He Prayeth Best	10	3	3–4
	Hunting Song	3	5	2–5
Collins, W	How Sleep the Brave	3	.....	5–7
Cone	Dandelions, The	3	4	2–5
Coolidge, S	How the Leaves Come Down	16	2	1–4
Cooper, G	Wind and Leaves	9	1	1–2
Cornwall, B. (B. W. Procter)	Sea, The	8	5	4–7
Cowper, W	Cricket, The	3	6	4–6
	Nightingale and the Glowworm, The	4	.....	4–6
Dickens, C	Ivy Green, The	4	5	.....
Drake, J. R	American Flag	14	6	5–8
Edwards, M. B	Child's Prayer, A	5	3	.....
Emerson, R. W	Concord Hymn	24	7	5–8
	Duty	3	.....	4–8
	Each and All	7	8	6–8
	Forbearance	3	7	4–7
	Humble-Bee, The	3	7	6–7
	Mountain and Squirrel	24	4	1–5
	Rhodora, The	9	7	6–8
	Snow-Storm, The	10	7	6–8
	We Thank Thee	7	.....	1–3
Field, Eugene	Christmas Eve	4	1	1–2
	Duel, The	3	3	2–3
	Japanese Lullaby	7	.....	2–5
	Little Boy Blue	9	2	1–4
	Nightwind, The	20	4	2–5
	Norse Lullaby	14	3	2–5
	Rock-a-by Lady	10	2	1–2
	Why Do Bells of Christmas Ring?	8	1	1–2
	Wynken, Blynken, and Nod	29	2	1–4
Fields, J. T	Captain's Daughter	6	3	3–5
Finch, F. M	Blue and the Gray, The	9	6	5–8
Follen, Mrs. E. L.	New Moon, The	8	1	1–2

TABLE I—*Continued*

Author	Title	1	2	3
Follen, Mrs. E. L. (*cont.*)	Stop, Stop, Pretty Water	4	.....	1–2
French, F.	Waiting to Grow	3	1	1–3
Garabrandt, N. M.	Dandelion	3	2	2–3
German, The	Lullaby	22	1	1–2
Goethe	Rest	5	8	4–8
Gould, Mrs. H. F.	Frost	12	4	2–7
Gould, S. B.	Now the Day is Over	3	.....	2–3
Grey, T.	Elegy in Country Churchyard (sel.)	8	8	7–8
Hale, Mrs. S. J.	Mary's Lamb	9	1	1–2
Halleck, F. G.	Marco Bozarris	4	.....	6–8
Hemans, Mrs. F. D.	Casabianca	8	4	4–5
	Landing of the Pilgrim Fathers	29	5	3–7
	Voice of Spring	3	7	.....
Henry, P.	Liberty or Death	3	7	.....
Herrick, R.	Succession of the Four Sweet Months	3	2	2–4
Higginson, Ella	Four-Leaf Clover	4	.....	4–5
Hogg, J.	Boy's Song, A	16	3	1–4
	Skylark, The	6	4	2–7
Holland, J. G.	Gradatim	14	7	5–8
	Lullaby	4	2	2–4
Holmes, O. W.	Chambered Nautilus	26	7	6–8
	Deacon's Masterpiece	5	7	5–7
	Grandmother's Story of Bunker Hill	3	7	.....
	Last Leaf	27	8	6–8
	Old Ironsides	25	6	4–8
	Union and Liberty	8	7	6–7
Hood, T.	I Remember, I Remember	4	3	3–4
Hopkins, J.	Hail Columbia	4	6	6–7
Houghton, Lord	Good Night and Good Morning	10	.....	1–3
	Lady Moon	17	2	1–2
Howe, J. W.	Battle Hymn of the Republic	12	8	4–8
Howitt, M.	Northern Seas	3	4	3–4
	Spider and the Fly	5	3	2–3
	Use of Flowers	3	.....	4–7
	Voice of Spring	5	3	.....
Howitt, W.	Wind in the Frolic	3	2	2–4
Hugo, V. M.	Good Night	5	1	1–3
Hunt, J. H.	Abou Ben Ahdem	30	6	4–7
	Grasshopper and Cricket	3	5	5–6
Ingelow, Jean	Seven Times One	30	2	1–5
Jackson, Mrs. H. H.	"Down to Sleep"	10	5	3–6
	October's Bright Blue Weather	25	4	2–6
	September	25	4	1–5
Janvier, Margaret T.	The Sandman	9	3	1–3
Jewett, S. O.	Discontent	6	2	1–3
Jones, Sir W.	What Constitutes a State?	6	.....	7–8
Jonson, B.	Noble Nature	3	5	5–7
Keats, J.	Autumn	4	.....	6–7
	Grasshopper and Cricket	6	6	4–6
Keble, J.	All Things Bright and Beautiful	3	2	1–2
Key, F. S.	Star-Spangled Banner	15	7	4–7
Kingsley, C.	Farewell, A	8	5	2–5
	Lost Doll, The	16	2	1–3

TABLE I—*Continued*

Author	Title	1	2	3
Kingsley, C. (*cont.*)	Sands o' Dee	3	.....	4–7
Kipling, R	Ballad of East and West	3	8	7–8
	L'Envoi	3	8	6–8
	Recessional	17	8	7–8
	Seal Lullaby	7	2	2–7
Krout, M. H	Little Brown Hands	10	3	1–4
Lang, A	Scythe Song	5	6	6–7
Lanier, S	Song of the Chattahoochee	8	.....	4–8
Larcom, L	Brown Thrush	19	2	1–5
	Calling the Violet	5	3	2–3
	Golden-Rod	3	6	5–6
	If I Were a Sunbeam	4	2	.....
	Rivulet	5	2	2–4
	Sir Robin	2	2	2–3
Lear, E	Owl and the Pussy Cat	13	2	1–3
Lincoln, A	Address at Gettysburg	20	8	6–8
Longfellow, H. W	Arrow and Song	23	5	3–8
	Bell of Atri	5	6	2–8
	Builders	20	6	5–7
	Building of the Ship	8	8	6–8
	Children	4	3	3–5
	Children's Hour	24	4	1–7
	Christmas Bells	4	.....	3–6
	Day Is Done	17	5	4–8
	Daybreak	11	7	2–8
	Excelsior	11	5	4–6
	Fiftieth Birthday of Agassiz	5	5	1–7
	Hiawatha	14	4	1–7
	Hiawatha's Childhood	13	1	1–3
	Hiawatha's Friends	3	.....	2–4
	Hiawatha's Sailing	10	3	3–5
	King Robert of Sicily	5	6	6–8
	Ladder of St. Augustine	3	8	7–8
	Lighthouse	3	6	.....
	Legend Beautiful	4	6	6–8
	Miles Standish	6	7	7–8
	My Lost Youth	4	7	3–7
	Old Clock on the Stairs	12	5	3–7
	Paul Revere's Ride	17	5	4–8
	Psalm of Life, A	18	5	5–8
	Rain in Summer	9	4	3–5
	Sandalphon	5	8	6–8
	Santa Filomena	5	.....	5–7
	Ship of State	16	8	5–8
	Skeleton in Armor	3	.....	6–8
	Snow-Flakes	6	.....	3–6
	Village Blacksmith	29	4	2–6
	Windmill	3	3	3–4
	Wreck of Hesperus	9	4	3–6
Lover, S	Angel's Whisper	3	3	1–3
Lowell, J. R	Aladdin	6	8	7–8
	Commemoration Ode	6	8	7–8
	Courtin', The	3	8	.....
	Day in June	7	8	6–8

TABLE I—*Continued*

Author	Title	1	2	3
Lowell, J. R. (*cont.*)	Finding of the Lyre, The	9	7	4–8
	First Snow-Fall	23	6	2–7
	Fountain	13	4	3–6
	Heritage	14	7	5–8
	Shepherd of King Admetus	3	6	5–6
	Singing Leaves	3	7	7–8
	Stanzas on Freedom	4	8	5–8
	Vision of Sir Launfal	9	.....	5–8
	Vision of Sir Launfal, Prelude	3	6	6–8
	Yussouf	4	5	5–6
Mabie, H. W	"Value of Literature"	3	8	...
Macauley, T. B	Horatius	8	7	6–7
MacDonald, G	Baby	15	1	1–2
	Little White Lily	4	.....	1–2
	Wind and the Moon	9	4	1–5
Mackay, C	Miller of Dee	6	.....	3–4
	Tubal Cain	5	6	3–6
Markham	Lincoln, the Man of the People	4	8	6–8
Miller, E. H	Little May	3	.....	2–5
	Blue Bird	15	4	2–4
Miller, J	Columbus	19	7	4–8
Milton, J	Evening in Paradise	3	8	.....
	May Morning	4	6	6–8
	On His Blindness	6	8	.....
Montgomery	Arnold von Winklereid	4	8	6–8
Moore, C. C	Visit from St. Nicholas	11	3	1–4
Moore, T	Minstrel-Boy	4	3	3–6
Morris, G	Woodman Spare That Tree	12	5	4–7
Mother Goose	Selections	52	1	1–2
Moultrie, J	Violets, The	5	2	2–3
Newman, J. H	Lead, Kindly Light	4	8	7–8
Payne, J. H	Home, Sweet Home	12	5	3–6
Perry, Nora	Coming of Spring	6	6	2–6
Pierpont, J	Warren's Address at Bunker Hill	16	8	5–8
Poe, E. A	Bells, The	3	7	7–8
Poulsson, A. E	Sunbeams, The	7	1	1–2
Procter, A. A	One by One	5	6	5–6
Procter, B. W	Sea	8	5	4–7
Rands	Great, Wide, Beautiful World, The	8	.....	2–3
Reade, T. B	Sheridan's Ride	7	6	6–8
	Windy Night, The	3	5	5–6
Riley, J. W	First Blue-Bird	4	5	5–7
	Knee-Deep in June	3	5	4–5
	Life Lesson, A	4	.....	3–8
	Old Aunt Mary's	3	.....	3–7
	Song, A	4	6	4–6
Rossetti, C. G	Consider	3	6	3–6
	Green Cornfield, A	4	5	3–5
	"O Lady Moon"	5	1	1–2
	Uphill	3	8	6–8
	White Ship	3	8	.....
Scott, Sir W	Breathes There the Man?	12	8	5–8
	Christmas	3	6	.....

TABLE I—*Continued*

Author	Title	1	2	3
Scott, Sir W. (*cont.*)	Coronach	3	8	7–8
	Douglas and Marmion	3	8	6–8
	Hie Away	4	3	2–4
	Lochinvar	9	7	5–7
	Love of Country	10	6	4–8
	Lullaby of an Infant Chief	3	2	2–4
	My Native Land	5	6	5–8
	Soldier Rest	3	.....	6–8
Shakespeare, W.	Blow, Blow, Thou Winter Wind	5	5	.....
	Farewell, a Long Farewell	4	7	.....
	Good Name in Man and Woman	6	7	7–8
	Hark, Hark, the Lark	8	7	3–8
	Neither Borrower nor Lender Be	8	8	6–8
	Noblest Roman of Them All	8	8	.....
	Orpheus with His Lute	4	6	5–6
	Over Hill, Over Dale	5	2	2–4
	The Quality of Mercy	13	8	6–8
	Under the Greenwood Tree	13	5	3–5
	Who Is Sylvia?	3	8	5–8
Shelly, P. B.	Cloud, The	12	8	7–8
	Skylark, To a	9	.....	3–8
Sherman, F. D.	Clouds	6	.....	3–5
	Daisies	16	2	1–3
	Dewdrop, A	6	1	1–2
	Four Winds	17	2	2–3
	March	3	3	3–4
	May	3	6	3–6
	Real Santa Claus	4	2	.....
	Shadow Children	4	2	2–3
	Vacation Song	3	3	.....
	Wizard Frost	3	2	.....
Sill, E. R.	Opportunity	11	8	5–8
Smith, S. F.	America	13	2	1–5
Southey, R.	Battle of Blenheim	3	.....	4–7
	Inchcape Rock, The	5	5	4–5
Stedman, E. C.	What the Winds Bring	11	.....	1–4
Stevenson, R. L.	Autumn Fires	10	1	1–3
	Bed in Summer	16	1	1–2
	Cow, The	9	1	1–2
	Foreign Children	5	1	1–2
	Foreign Lands	4	3	.....
	Good Play, A	3	1	.....
	Happy Thought	7	1	1–2
	Lamplighter, The	3	1	.....
	Land of Counterpane, The	7	.....	1–3
	Land of Story Books, The	10	2	2–4
	Moon, The	3	.....	1–4
	My Bed is a Boat	7	1	1–3
	My Shadow	28	2	1–3
	Rain	13	1	1–2
	Sun's Travels, The	5	1	1–3
	Swing, The	28	1	1–2
	Time to Rise	4	1	.....
	Where Go the Boats?	12	3	1–3

TABLE I—*Continued*

Author	Title	1	2	3
Stevenson, R. L. (*cont.*)	Whole Duty of Children	9	1	1–2
	Wind, The	25	1	1–4
	Windy Nights	7	2	2–3
	Winter-Time	4	2	1–4
Swett, S. H.	Blue Jay	3	5	.....
Tate, N.	While Shepherds Watched	11	4	2–4
Taylor, B.	Song of the Camp, The	7	8	5–8
Taylor, Jane F.	Thank You, Pretty Cow	6	1	1–2
	Twinkle, Twinkle, Little Star	15	1	1–2
	Violet, The	5	3	2–4
Tennyson, Lord	Break, Break, Break	7	5	5–7
	Brook, The	26	4	3–8
	Bugle Song, The	26	7	2–8
	Charge of the Light Brigade, The	17	6	4–7
	Crossing the Bar	6	7	6–8
	Death of the Old Year, The	4	7	4–8
	Eagle, The	7	.....	2–8
	Flower in the Crannied Wall	6	8	6–8
	Owl, The	10	3	2–4
	Revenge, The	3	.....	6–8
	Shell, The	6	8	6–8
	Sir Galahad	9	7	6–8
	Sweet and Low	23	4	1–4
	Trostle, The	4	4	3–6
	What Does Little Birdie Say?	23	1	1–2
	Winter	4	4	2–4
Thaxter, C.	Little Gustave	6	2	2–3
	March	3	3	.....
	Piccola	3	5	3–5
	Sandpiper, The	25	4	3–7
	Wild Geese	3	2	.....
Thomas, E. M.	Talking in Their Sleep	4	5	3–5
van Dyke, H	Angler's Reveille	4	8	.....
Wadsworth, O. A.	Over in the Meadow	9	1	.....
Warner, A. B.	Daffy Down Dilly	4	.....	2–5
Watts, I.	Cradle Hymn, A	3	3	1–3
Webster, D.	Reply to Hayne	5	8	7–8
Westwood, T.	Little Bell	3	2	2–4
Whitman, W.	O Captain, My Captain	19	8	5–8
Whittier, J. G.	Abraham Davenport	3	8	7–8
	Barefoot Boy	23	5	2–8
	Barbara Frietchie	11	.....	3–8
	Corn Song, The	15	5	3–8
	In School-Days	13	5	2–7
	Palm-Tree, The	5	3	3–6
	Pipes of Lucknow, The	4	6	.....
	Skipper Ireson's Ride	3	7	5–7
	Snow-Bound (sel.)	10	8	5–8
	Telling the Bees	3	7	3–7
	Thanksgiving Ode	3	7	6–7
	Three Bells	6	4	3–5
Wolfe, C.	Burial of Sir John Moore, The	10	6	5–8
Wordsworth, W.	Happy Warrior, Character of the	3	8	.....
	Lines Written in Early Spring	4	2	2–4

TABLE I—*Concluded*

Author	Title	1	2	3
Wordsworth, W. (*cont.*)	Lucy Grey	10	4	3–6
	Pet Lamb, The	6	.....	1–4
	Solitary Reaper, The	4	7	3–7
	To a Butterfly	5	3	2–3
	To a Child	3	3	.....
	To Daffodils	22	6	3–8
	To the Rainbow	3	6	5–6
	To a Skylark	3	7	4–7
	We Are Seven	8	4	2–5

In Table I, which precedes, in the first column following the title is the number of times it is recommended by the systems studied. In the second is the school grade for which it is recommended the largest number of times. In the last the lowest and highest grades for which it is recommended are shown.

This list of 382 selections is a very generous one from which to choose. Obviously only a comparatively small fraction of the whole can be prescribed for any school system. A safe plan is to choose those selections that occur the greatest number of times. The following select list of about 100 titles includes all that occur ten or more times. They are grouped according to the grades in which they occur most frequently.

TABLE II

AUTHORS AND TITLES MOST POPULAR IN THE SEVERAL GRADES AND THE RANGE OF THEIR RECOMMENDATION

Author	Title	No. Times Recommended All Grades	Range of Grades for Which Recommended
	FIRST GRADE		
Alexander	All Things Bright and Beautiful	15	1–2
Brown	Little Plant Seed	11	1–2
The German	Lullaby	22	1–2
Longfellow	Hiawatha's Childhood	13	1–3
MacDonald	Baby	15	1–2
Mother Goose	Selections	52	1–2
Stevenson	Autumn Fires	10	1–3
	Rain	13	1–2
	Swing	28	1–2
	Wind	25	1–4
Taylor	Twinkle, Twinkle, Little Star	15	1–2
Tennyson	What Does Little Birdie Say?	23	1–2
	SECOND GRADE		
Allingham	The Fairies	10	2–4
Cary, P	Suppose	15	1–4
Child	Thanksgiving Day	15	1–3
Coleridge	Answer to a Child's Question	10	2–4
Field	Rock-a-by Lady	10	1–2
	Wynken, Blynken, and Nod	29	1–4
Houghton	Lady Moon	17	1–2
Ingelow	Seven Times One	30	1–5
Kingsley	Lost Doll	16	1–3
Larcom	Brown Thrush	19	1–5
Lear	Owl and Pussy Cat	13	1–3
Sherman	Daisies	16	1–3
	Four Winds	17	2–3
Smith	America	13	1–5
Stedman	What the Winds Bring	11	1–4
Stevenson	Land of Story Books	10	2–4
	My Shadow	28	1–3
	THIRD GRADE		
Aldrich	Marjorie's Almanac	12	3–4
Allingham	Wishing	10	2–4
Bible	Twenty-third Psalm	10	2–5
Bjornson	Tree	18	1–5
Brooks	Little Town of Bethlehem	13	2–6
Cary, A	November	15	1–4
Coleridge	He Prayeth Best	10	3–4
Field	Norse Lullaby	14	2–5
Hogg	Boy's Song	16	1–4
Krout	Little Brown Hands	10	1–4
Longfellow	Hiawatha's Sailing	10	3–5
Moore	Visit from St. Nicholas	11	1–4
Stevenson	Where Go the Boats?	12	1–3
Tennyson	Owl	10	2–4

TABLE II—*Continued*

Author	Title	No. Times Recommended All Grades	Range of Grades for Which Recommended
	FOURTH GRADE		
Emerson	Mountain and Squirrel	24	1–5
Field	Night Wind	20	2–5
Gould	Frost	12	2–7
Jackson	October's Bright Blue Weather	25	2–6
	September	25	1–5
Longfellow	Children's Hour	24	1–7
	Hiawatha (selections)	14	1–7
	Village Blacksmith	29	2–6
Lowell	Fountain	13	3–6
Miller	Blue Bird	15	2–4
Tate	While Shepherds Watched	11	2–4
Tennyson	Sweet and Low	23	1–4
	Brook	26	3–8
Thaxter	Sandpiper	25	3–7
Wordsworth	Lucy Gray	10	3–6
	FIFTH GRADE		
Browning	Year's at the Spring	15	1–7
Bryant	Gladness of Nature	17	3–8
	Planting of the Apple Tree	18	2–8
	Robert o' Lincoln	22	1–8
Carlyle	The Day	21	2–7
Hemans	Landing of the Pilgrims	29	3–7
Jackson	"Down to Sleep"	10	3–6
Longfellow	Arrow and Song	23	3–8
	Day is Done	17	4–8
	Excelsior	11	4–6
	Old Clock on the Stairs	12	3–7
	Paul Revere's Ride	17	4–8
	Psalm of Life	18	5–8
Morris	Woodman Spare That Tree	12	4–7
Payne	Home, Sweet Home	12	3–6
Shakespeare	Under the Greenwood Tree	13	3–5
Whittier	Barefoot Boy	23	2–8
	Corn Song	15	3–8
	In School Days	13	2–7
	SIXTH GRADE		
Aldrich	Before the Rain	11	2–6
Bennett	The Flag Goes By	19	1–7
Bryant	Song of Marion's Men	12	4–7
Burns	Man's a Man for a' That	13	5–8
Cary, A	Nobility	12	4–7
Drake	Our Flag	14	5–8
Holmes	Old Ironsides	25	4–8
Hunt	Abou Ben Ahdem	30	4–7
Longfellow	Builders	20	5–7
Lowell	First Snowfall	23	2–7
Scott	Love of Country	10	4–8

TABLE II—*Concluded*

Author	Title	No. Times Recommended All Grades	Range of Grades for Which Recommended
Tennyson	Charge of the Light Brigade	17	4–7
Whittier	Barbara Frietchie	11	3–8
Wolfe	Burial of Sir John Moore	10	5–8
Wordsworth	To Daffodils	22	3–8
	SEVENTH GRADE		
Bryant	To a Waterfowl	20	6–8
Emerson	Concord Hymn	24	5–8
	Snow-Storm	10	6–8
Holland	Gradatim	14	5–8
Holmes	Chambered Nautilus	26	6–8
Key	Star-Spangled Banner	15	4–7
Longfellow	Daybreak	11	2–8
Lowell	Heritage	14	5–8
Miller	Columbus	19	4–8
Riley	Old Glory	10	5–8
Tennyson	Bugle Song	26	2–8
	EIGHTH GRADE		
Addison	The Spacious Firmament	10	6–8
Bryant	Thanatopsis	12	7–8
Holmes	Last Leaf	27	6–8
Howe	Battle Hymn of the Republic	12	4–8
Kipling	Recessional	17	7–8
Lincoln	Address at Gettysburg	20	6–8
Longfellow	Ship of State	16	5–8
Pierpont	Warren's Address	16	5–8
Scott	Breathes There the Man?	12	5–8
Shakespeare	The Quality of Mercy	13	6–8
Shelly	Cloud	12	7–8
Sill	Opportunity	11	5–8
Whitman	O Captain, My Captain	19	5–8
Whittier	Snow-Bound (selections)	10	5–

ADDRESSES BY CITIZENS TO SCHOOL BOYS.—*Concluded*

PHYSICAL CULTURE

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The object of physical culture, as applied to you young people, is to develop your bodies in such a way as to bring them into that condition which we know as most favorable for perfect health. Just as the general education you get in school is not designed to fit you for any particular walk of life, so the object of these exercises is not to train you to do any special feats of strength or agility, but to produce healthy, symmetrical bodies; and this symmetry, if you think a moment, really means the same thing as beauty.

Before going into any special profession or occupation, the wisest thing for you to do is, of course, to get a good, sound, general education as a foundation, and if any of you wish to go into any particular line of athletics with a view to excelling in it, you should not do so until all your muscles have been evenly developed and growth has practically been completed.

For anyone to lay down a set of rules for physical exercises and intelligently apply them it is plain that he should have some knowledge of the structure of the human body and of its functions; that is, he should know some anatomy and some physiology. The same is also true of you, if you are rightly to understand and appreciate the value of these exercises.

Each of your bodies has, as you know, a strong framework made of bones, and these bones are joined together by tough membranes and bands called ligaments, these often being arranged so that between two adjoining bones there is a hinge-like movement possible. Outside these bones and attached to them are the muscles which make up the greater part of the bulk of our bodies. These muscles are generally spindle shape in form and are able to shorten in one direction, and it is by this property we are able to move; and even when we are not moving they, by having a certain tone, support the different parts of the body. Outside

these muscles is the tough skin that serves a very important purpose in protecting our other tissues.

There is, besides, the little muscular pump, called the heart, that pumps the blood to every part of our anatomy, and this blood carries with it certain substances to feed and nourish our bodies, which substances it picks up from the digestive tract and the lungs.

Then there is the most wonderful part of all, the nervous system, which rules the whole body and which may be compared to an electric battery, which is the brain, and from this battery run little tubes or fibers, to all parts of our bodies. When we wish to move an arm, from our brain goes an impulse down one or more of these little nerves and certain muscles shorten and the limb moves.

This is, of course, a very crude description, but perhaps it will help you to understand better what I am going to tell you. To begin with, Nature has made a law that all the muscles or organs of our bodies must be exercised or used if they are to remain normal and healthy; so that if you bandage up an arm in such a way as to prevent movement, even for a few weeks, you will find when you remove these bandages that it is much smaller and weaker than its fellow, because the muscles have wasted away from non-use. And the same thing occurs over a large part of the body if the patient is simply put to bed and kept from exercise. Even higher organs than muscles come under the same rule. I am sure most of you have heard of the little fish in the great cave of Kentucky. These fish have become totally blind because they have lived for generations in perfect darkness, and as they could not use their eyes they gradually became quite sightless.

Now that very young children and animals may get this needful exercise, there is implanted in them a desire for play, and that they may not do this to excess, Nature has provided that when they have had enough they get tired and want to rest or sleep. From this a very useful lesson can be learned, for, especially when we are growing, we should not indulge in any muscular effort to excess, but should heed the warning that comes to us from feeling tired. If by will power we force our muscles to do too much work, they may not become sufficiently refreshed during the next period of rest to be in the best possible condition when required for use again.

The wise Mother Nature has also arranged that if a muscle

or group of muscles is used more than others, that is, within reasonable bounds, it gradually increases in size and strength. This is a very fortunate thing, for you know how necessary strong arms are to a blacksmith and strong legs to a soldier. These changes come very gradually, and this is a very important thing to remember, for Nature needs time to increase the size and number of the muscle cells. If a boy wishes to do any feat, such as running a certain distance or throwing a weight, the proper way is to fit himself by gradually increasing exercise for it. This seems to have been known to people long ago, for you have read of the famous athlete who commenced to lift the calf every day until finally he was able to lift it even when it had become a full grown ox.

Here I would like to again impress on you these simple facts:

1. That a muscle must be regularly exercised to keep up its strength and condition of health.

2. That if a muscle or group of muscles is exercised so that gradually more and more work is imposed on it, and ample intervals allowed for rest, it will increase in power, often to a wonderful extent.

3. That if, on the other hand, it has too great a task imposed on it, and is not given sufficient rest, it may become chronically tired and even weaker.

Sometimes a boy or girl, by getting into careless habits, may not give certain of his or her muscles a chance to develop; for instance, if he sits continually in an improper position, he may not exercise certain of the muscles of his chest properly and these may become weaker than those that are used, and this may go so far as to interfere with the proper expansion of the chest, a very important thing; or some of these muscles that support the spinal column may be affected in the same way and you may even get a deformity which may be very hard to cure. The same thing applies to all the muscles of the body, and it is the part of the instructor to pick out these defects and decide the proper exercises for their correction.

Another result obtained from proper physical exercises is the education of the nervous system. You all know how difficult it is to do even simple things such as drawing a straight line or sharpening a lead pencil, when you try it for the first time. This is because the little paths or tubes through the nervous system are

not used to carry the impulse to the particular muscles, but after you practice these actions for a time they soon become easy, and then so that you hardly know that you are doing them; that is, automatic, all because the nerve paths have been educated, or perhaps, as some think, new ones formed. So you see these exercises may be of use in training you to precise and graceful movement.

One thing I would like to leave clearly impressed on you, even though by doing so I may be wandering away from the exact subject of this talk, and that is the very serious injury you may do yourselves from excess in your sports and games.

This damage falls particularly on the circulatory system, which consists as you know of the heart and blood vessels, and whose function is to carry the nutrient blood to all parts of our bodies. The heart is nothing more than a little pump whose walls are a peculiar kind of muscle, but which obeys the same laws as those we mentioned in connection with the skeletal muscles. That is, if it is given extra work to do over a considerable period, the muscular wall thickens and it becomes much more powerful and pumps the blood along with greater ease. This is why athletes who are in training feel so well and are able to run great distances or play long, hard games without being exhausted. A Marathon runner who would be in perfect condition would have the muscles of his legs well developed and firm, and, more important, his heart developed so that it would keep pumping the blood more rapidly through the lungs and tissues of the body. If this were not so, he would soon fall exhausted.

This desired condition he brings himself into by daily practice, gradually increasing the distance until he is equal to the task of running the whole odd twenty-five miles. Now if he were to force himself to run this great distance without any preparation, what would likely happen would be that the muscular wall of his heart, not being gradually prepared for the prolonged strain, would weaken and stretch and the cavity of the heart be dilated, with the result that the runner might even die or at least damage himself very seriously. And this is exactly what often happens to boys who play hard games of hockey or lacrosse without proper preparation.

And it is not only the heart that may suffer from excessive or irregular strain, but these elastic tubes, the arteries, and especially

the large one next the heart may be damaged. So that it is not uncommon for porters and others who have to lift great weights at irregular intervals to have the walls of this artery give way, forming a little sac or pouch which grows and which often, by rupturing, causes sudden death; or the wall may not be so seriously damaged and the effects may be noticed only later on in life.

While training and getting into condition within reasonable bounds is not a bad thing, it is to be remembered that if a boy has been playing lacrosse or football all season he should not stop exercise suddenly, but as he should prepare himself gradually, so he should also gradually diminish his exercise. The reason of this is that his heart wall has become thicker and stronger during his training by the muscle cells becoming larger and perhaps more numerous. When he gives up his sport he has no use for the extra muscle, and Nature, as we said above, always adapts a muscle, even the heart, to the amount of work required of it, so that these heart muscles return to their normal size. And if this is allowed to occur too quickly the heart may become temporarily weaker than normal while these changes are going on, and harm may be done. In fact, every doctor sees such a case now and then.

In a little talk like this it is of course impossible to tell you many things I would like to, but if I have succeeded in exciting your interest in your own bodies I will be very much pleased; and I am sure you will be able to get any special information from your teachers. You will also, I hope, take more interest in the instruction given you in physiology, for what can be more important for a man or woman than to know all about his or her body and how to care for it?

THE TRAINING OF AN ELECTRICAL EXPERT

PROFESSOR E. P. FETHERSTONHAUGH
University of Manitoba

I am here today to tell you something about electricity and the electrical industry and also to talk to you about the education that a man must have if he is to become an expert in this line of work. At the age you have now reached you should be beginning to plan your training for some branch of work, and I must impress

on you the necessity of taking advantage of every opportunity in the way of education that is available, no matter what kind of work you are going in for. In these days of strenuous competition it is only the man with the highest qualifications who can reach the highest positions. In electrical work there are many such positions to be had, and, if we look forward to the future of this Province with its magnificent water powers and the many systems of electrical railways, city lighting, power plants, and industries to be operated by electricity, we cannot fail to realize that a high degree of training will be required by the men who are to occupy the best positions in these industries.

In order that you may have some definite idea of what electricity can be made to do, I have brought with me some simple pieces of apparatus which can be made by any boy at home, and which illustrate the fundamental principles of electrical science. I will first show you how an electric battery can be made. If you take a glass jar about the size of this one I have, and place in it six ounces of sal-ammoniac, and then fill it about two-thirds full of water, and place in it a piece of carbon and a piece of zinc, you have a simple electric battery, and if you take two wires and connect one to the zinc and the other to the carbon and touch them together, a current of electricity will flow through them. This current may be made stronger by connecting two cells together, that is, connecting the carbon of one to the zinc of the other, and then connecting the outside carbon and zinc to whatever you are going to use the electricity on.

Now let us see what we can do with this current that we have available. You will notice that this needle, which is a piece of hard steel which has been magnetized, always points in one direction, that is, toward the north pole. This is because the earth is a magnet and the north pole of the earth attracts one end of this needle, and the south pole attracts the other. The end of the magnet which points toward the north pole is called the north pole of the magnet and the other end is called the south pole. This needle is a permanent magnet, but we can also make magnets which are not permanent, these being made from soft iron instead of steel. If I take this coil, which consists of 200 turns of insulated copper

wire, and place it around this U-shaped piece of soft iron, and then send a current of electricity from the battery through the coil, the U-shaped iron will become a magnet and you will see that it can lift a piece of iron of considerable size. If I disconnect it from the battery it loses its magnetism immediately and the piece of iron will fall. This is called an electro-magnet. One of its ends will be a north pole and the other a south pole; but if I connect the coil to the battery in the reverse direction so that the current flows in the opposite direction around the magnet, the end which was previously a north pole now becomes a south pole. A north pole of one magnet will attract a south pole of another magnet and will repel a north pole of another magnet and it is on this principle that all electric motors are operated. An electric motor in its simplest form consists of two magnets, one of which is always magnetized in the same direction and is called a field magnet, and another which is arranged to revolve between the ends of the field magnet and has an arrangement called a commutator which, as it revolves, changes the direction of the current passing through its winding in such a way that just as its north pole has reached a south pole of the field magnet, the polarity is reversed and therefore the south pole of the field magnet repels the south pole of the revolving magnet, or armature as it is called, and thus it is made to revolve continuously. A motor built on this principle can be made very powerful and will drive machinery by connecting its shaft directly to the machine to be driven or by means of a pulley and belt.

A peculiar fact about this machine is that if it is driven by some outside force, for instance if you revolve it by hand, it would generate or produce a current of electricity. So you see a dynamo or generator is just the same machine as a motor, the only difference being that the motor is supplied with electricity and produces mechanical power and the generator is supplied with mechanical power and produces electricity. It would be too expensive to generate electricity for large lighting systems by means of batteries such as I have described above and consequently we get all our electricity from these machines called generators, which are driven either by steam engines, by hydraulic turbines, or by gas engines. In the electric plants at Lac du Bonnet and at

Point du Bois, from which we get our city supply of electricity, very large generators of thousands of horse-power capacity are used and as the voltage which these generators supply is very high, and the mechanism by which the current is conducted from the generators to the transformers and from the transformers to the transmission line is very intricate and complicated, and since the one essential in a plant such as this serving a large community is to avoid a shut-down or interruption to the service, you will realize the necessity for having such plants designed by very competent experts and operated by highly skilled engineers. The same applies to motors in machine shops and to all sorts of electrical machinery on which our various industries depend, and if you are thinking of going in for electrical work the question is "How is the necessary knowledge to be obtained?" In answer to this my first advice would be to stay at school until you have finished your school course and taken every advantage that the schools in our city are now so well able to afford. The next step would be to take a course in electrical engineering at a university if this is possible, as such a training affords the best opportunities for getting a knowledge of all the underlying principles forming the foundation of this profession. If you cannot take a university course you can enter the services of some electrical company and learn by experience a great many of the practical applications of electrical principles, and if you study at home and take advantage of night classes and read the technical papers you can acquire a very fair knowledge of the subject, but let me impress upon you the fact that whether you gain your knowledge through a university course or through the school of experience, it is only by hard work and continuous study that you can become an expert in electrical work.

THE POSSIBILITIES FOR SUCCESS IN RAILWAY WORK

GEORGE BURY
Vice-President and General Manager of Canadian Pacific Railway

Ordinarily, every boy is fitted to attain success in some walk of life. Before deciding on his life work, a boy should endeavor to learn for himself what thing he is best adapted for and then

follow that line. Should he feel that his future lies in railway work there are many avenues he might enter and follow to success.

Before entering the service of the railway, a boy should have a good common school education, and if he determines to be successful, he should, at the outset, endeavor to make himself master of the details of the position he enters upon.

A straightforward, manly disposition counts for almost more than anything in attaining success in life. Every man having a reputation for integrity, thoroughness, perseverance, and loyalty is eagerly sought after by all employers.

Having determined to enter railway service, there are many avenues which might be followed. If a boy determines that his natural inclination is for mechanics, he might enter as an apprentice and, depending on the trade selected, would in the course of four or five years become a full-fledged mechanic.

Having learned the mechanical trade, if ambitious, he would in a short time be promoted to an assistant foreman, from that to foreman, district master mechanic, master mechanic, superintendent of motive power, and finally general manager, as is witnessed by the career of Mr. Hall, the present General Manager of Western Lines.

Now, it would naturally occur to you that while there are thousands of mechanics, there is only one general manager, but it must be remembered that there are a great many foremen, assistant foremen, master mechanics, etc., and that a number of men having reached the position of tradesman are satisfied to remain there, because, following the lines of least resistance, it is easier to be free of responsibility at the end of the day's work rather than to attend night school and study with a view to fitting oneself for the higher positions.

If engineering appeals to a boy, and his parents are not in a position to afford a regular college course, he might enter the service as a rodman, at a salary of forty dollars per month and his board, and work up to the position of civil engineer, studying mathematics and engineering generally in his spare time, so that his actual and technical experience would in time fit him for the position he was aiming at. Once having become a civil engineer, every position on a railway is open to him.

If the train service appeals to him, he might enter the yard office in a clerical capacity until he was twenty-one years of age, when he could adopt yard or train work, beginning as a brakesman. The wonderful growth of Canada is such that the number of men in train service will be continually added to, and as the Canadian Pacific Railway follows the practice of promoting its own men, it would be only three years, or four at the outside, before he would be promoted to the position of freight train conductor, or, if he entered the yard service, the position of yardmaster. Having arrived at the position of yardmaster or trainmaster, every position in the railway service is within his reach.

If a boy prefers an outdoor life entirely and thought of entering the maintenance of way department when becoming full grown, he could enter the service as a section man and quickly be promoted to section foreman, and if he studied, was observant, and fitted himself, would quickly be promoted to the position of roadmaster, or, if he entered as a carpenter, might find himself promoted to the position of bridge and building master.

If instead of an outdoor life he preferred indoor work, there are two channels by which he might enter. He could either fit himself as a stenographer or enter as an agent's assistant and learn telegraphy. If he determines that he has a natural aptitude for clerical work, having perfected himself in stenography, he would have no trouble in securing a position in the railway service. Once having secured a position as a stenographer, if he studied and determined to succeed, his promotion in the West, where the growth is so great at the present time, would be very fast. Having entered the service as a stenographer, if he had a good address, became proficient in taking notes and transcribing them accurately, he would very quickly be picked up as secretary to some officer, and in that position he would learn the details of the work of administrative duties, and quickly fit himself for an official position, his ability, honesty, perseverance, and personality being the only limit to his advancement.

Should he determine to climb the ladder through the station service, he would begin work as a station assistant. During his spare hours he would learn telegraphy, and inside of a year from

entering the service, he would be fitted to take a small office as operator. From that he would in turn be promoted to a station agency at a small station, then advance to the larger stations, and, if he displayed the necessary qualifications, would be picked up and placed in the traffic department, beginning as a traveler and winding up as a chief officer.

Or if the transportation side appealed to him more than the commercial, he would in time be transferred from station agent to the position of train dispatcher, and from that to chief train dispatcher, trainmaster, superintendent, and so on.

It will naturally be said that there are few official positions and that the opportunities are few and far between for advancement. I would point out, however, that the President of our Company, Sir Thomas G. Shaughnessy, began work as a clerk in the Stores Department, that the General Manager of Western Lines, Mr. Hall, began his career as a machinist's apprentice. We have four General Superintendents: Mr. Coleman, who has just recently been appointed in charge of the Manitoba Division, began as a stenographer, and his salary twelve years ago was $40 per month. The General Superintendent of the Saskatchewan Division began as a clerk in the Mechanical Department. The General Superintendent of the Alberta Division began as a telegraph operator. The General Superintendent of the British Columbia Division began as a clerk. Every officer on the Canadian Pacific Railway began in the service in a junior position and worked his way to his present position.

It will probably surprise you to know that I am continually looking around for officers and that most of the other Western Railways are doing the same thing. If there is a vacancy for a superintendent, for instance, a list of all the trainmasters, district master mechanics, roadmasters, chief train dispatchers and chief clerks is made out, with their age, the date they entered the service, etc. This list is then gone over with a view to determining which would be the most suitable man for the position.

First, the characters of the different men are discussed and those who are known to be lacking in courtesy are struck off the list. Of the remainder, it is determined that some have not endeav-

ored to fit themselves for promotion to the vacant position, not having improved on earlier defects in education, and their names have to go by the board. Of the names left, it is found that some are lacking in the moral courage necessary to handle large bodies of men, or are without initiative, resourcefulness, or are lacking in ambition, and their names are struck off, so that it finally comes down that there are but a few considered eligible. When it is narrowed down to this, the man who is senior in the service is given the position.

It may be truthfully said that a man's future rests almost entirely with himself. There is no use in denying that luck sometimes enters into a man's success, but I am not much of a believer in luck, because opportunity, in the West at any rate, will come to all boys, and those who have fitted themselves to take advantage of the opportunity that presents itself will be thought to be lucky.

I think that all boys should stay at school until they are well grounded. It is, of course, to be expected that through unfortunate circumstances some boys will have to leave school earlier than is good for them—too early to receive a good grounding, but then these boys who are so unfortunately placed should take advantage of their spare hours to make up for the loss in their education from having been compelled to leave school too early.

The world is certainly becoming better all the time, and the relations generally between men and their employers are better than ever before.

THE LITHOGRAPHING TRADE

W. J. BULMAN
Of Bulman Bros., Ltd., Winnipeg, President of the Winnipeg Industrial Bureau

Now, boys, I want to tell you about a business that depends upon something which was known from the beginning of the world but was never applied to printing until the year 1789. You all know grease and water will not mix, don't you? Well now, just because they don't mix, lithographers can make the colored pictures you see and a great many other forms of printing which you would never guess depend entirely upon that one fact. Don't you think

it strange that thousands of years should elapse, and millions of men live and pass away with this fact known to them, and yet the great industry of lithography had to wait for a German named Aloys Sennefelder to discover how to use it, and while improvements in machinery and methods have taken place, still the great idea of how to use the fact was his? And, boys, upon just such little facts most of the great industries find their base, and maybe some one of you when you grow up will adopt some little truth you learn and discover an invention upon which some great industry employing thousands of men will grow up, and the world be richer for your having lived. I have brought with me a little piece of what we call lithographic stone. It is a limestone and is found in Bavaria. This stone is of a fine grain, and if you put grease upon it, it is able to absorb enough of it to make a greasy spot, and then if water is put upon it, it also absorbs a little of that where it is not greasy. Now, you can imagine what takes place. Here is a greasy line, the rest of the stone is damped with water and we take a roller covered with printing ink and roll it over the stone; what happens is this: the ink being of a greasy nature adheres to the greasy line but will not stick to the damp parts of the stone because the water is there. The part of the roller which touches the line gives up some of its ink, but on the part which touches the damp places, the water comes between and the ink does not dirty the stone, it just stays on the roller. Now, the line having ink on it, it only remains to put paper on that and something to squeeze it down hard, and when we lift it off there is a print of the line on the paper. That is the process. But, boys, it takes great skill to take greasy ink and draw beautiful things on the stone, so it is hard to get lithographic artists. That is a trade by itself, and if you ever learn to be a lithographic artist you can be certain that if you are very skilful every employer in the land will try to obtain your services, and you can command a very good salary. But if you are an ordinary workman you will get about $20.00 per week and if you are a poor one you will not get any more than you could earn with a pick and shovel. The same is true of the engravers, the men who with a tool, very like a lead pencil, but having steel instead of the lead, cut lines, etc., into the stone's surface, and fill them in with ink. This is the way

all the finest stationery is printed. In this art there is a very great demand for good men and they are as well paid as the artists; but again if you are only an incapable workman the result is "pick-and-shovel" wages. The same is true in every department of lithography, and, boys, when you grow up you will learn it to be true of every trade or calling. Whether you can make life pleasant and comfortable not only for yourself, but for all that may depend upon you, depends right now upon your earnest effort to study, and a little later, on choosing a calling and then applying what you have learned, giving your whole self to your work. If you do this, your reward is sure.

I am very anxious that you will grow up earnest workers to make this, your home city, famous as the place where the best workmen are found. It can be done only by forming the habit of being perfect in your work. Remember that you will commit the greatest crime possible if you leave school too soon, for you then kill your own possible future. Think of what must be learned in this trade. Every engraver ought to know enough geometry to make the perspective correct when he has to engrave a building or other picture. Every artist must also have some knowledge of geometry, and if he is to be a superior workman he should read a great deal to gather ideas and fit himself to apply suitable designs to all sorts of business. The man who prints what the artist draws should have a knowledge of chemistry, an understanding of mechanics to take care of his machine, and a knowledge of color mixing. Then there is a trade we call that of the transferrer. He is a man that can take prints from the artists' and engravers' work and transfer them to another stone. I will show you a sheet of labels. You see the artist drew only one label, but the transferrer has made a great many prints of that and stuck his prints upon a sheet of paper in the form required to fill this large sheet. He then turned them face down onto a clean stone and applied pressure, so transferring the wet ink to the new stone. After preparing it is then printed by the printers as you see it.

I will explain how the printing of colored pictures is done. The artist first paints a picture complete, which is submitted to the man who wants to buy such a picture. After the buyer approves of it,

the artist lays upon the painting a sheet of transparent gelatine and traces with a sharp point an outline, the point making a scratch in the gelatine. This scratch is then filled in with ink by the transferrer and the gelatine is damped, then squeezed upon a stone so as to transfer the outline. This outline is then printed on a few sheets of paper and while the ink is wet a red chalk is dusted over it; this sticks only to the wet ink and is shaken off every other part of the paper. Next these sheets are placed each upon a clean stone and squeezed so as to make a chalk mark of the outline, and these stones are given to the artist, who proceeds to draw carefully to these outlines all the yellow there is in the picture, like the sheet I am showing you, then he draws all the red on another stone, all the blue on another until he has all the colors needed to perfect this picture and make it just like the original painting. The printer prints from these stones one at a time, namely, all the yellow first, the red next, and so on. You remember what I said before about grease and water; well, the presses have flannel rollers which are kept damp and they run over the stone, then after these, rollers covered with leather and the leather covered with printing ink also run over the stone. The water not going where the greasy design is, and the ink not going where the water is, leaves it so that when the work is all inked, a cylinder pressing a sheet of paper on the stone makes the ink mark the paper as you see. It is very simple, but, boys, most things men work at are simple, that is, each operation is a simple one. Men grow up from boys and, strange to say, they don't change much. It only seems that the able, useful, and successful men are boys that are willing to plug hard and work hard practicing, who are not soft-headed enough to let fun and pleasure take all the time, but study hard and work earnestly at whatever they undertake. The Bible says "Whatever your hands find to do, do it with your might." That is the key to success today, and remember, boys, you have not only to use your might of muscle, but the more important might of brain; for it is of little use to have the muscular power of an elephant, but of tremendous use to have the power of mind of a Newton. This immensely valuable faculty of mind you are cultivating in school and as your time is short, your teachers are trying to give

you the keys to many departments of knowledge, so that you can use them in after life and get at what you want to make success. I have one thought I want you to remember: Without knowledge you cannot be a good workman, and if you are not a good workman, you and all depending upon you are condemned to that horrible life of the inefficient, filled with unspeakable irritations and despair.

A TEACHER-TRAINING EXPERIMENT EVOLVED BY THE SCHOOL AUTHORITIES OF LIMA, OHIO

JOHN DAVISON
Superintendent of Schools

A plan has been evolved at Lima, Ohio, for the special training of elementary teachers for the city schools, which has been in practical operation under my personal supervision for more than eight years. By this plan the preparing of young and inexperienced teachers for their work in the primary grades is carried on successfully without any additional cost to the city. Two separate rooms in the Garfield Building, containing the second and third grades respectively, are under the direct personal supervision of a special instructor who receives the combined salaries of the two grades and acts as training teacher.

Since the beginning of the present school administration at Lima, nearly nine years ago, from eight to twelve apprentice teachers have been selected from the training class each year, the requirements for admission being as follows: (1) The applicant must be a graduate of the Lima High School, or of some other school of equal rank with that of Lima, or have had an education equal to the four-year course given in Lima High School. (2) The applicant must have passed satisfactorily the Lima city teachers' examination for an elementary certificate. (3) The applicant must be appointed to membership in the training school by the Superintendent of Schools and the appointment must be regularly confirmed by the board of education.

The training course is one year in length. During this time each student spends at least two months in each of the two grades, one month as assistant, and one month in actual practice teaching. The assistant must observe the teaching of the training teacher, assist in directing seat work, and become familiar with all reports required by the superintendent and with the ordinary routine of the

classroom. After the student-teacher has mastered these requirements so that she feels free in the presence of the class, she begins to teach under the close supervision of the training teacher. Outlines of every lesson given must be prepared at first with the direct help of the training teacher, but later without assistance. These lesson plans are always carefully criticized before they are used in the class. After the lesson is given, the training teacher indicates the causes of success or failure, placing special emphasis on all the good points, thus giving all the encouragement that may be necessary in order to secure the best results.

When the student-teacher is not engaged in teaching or assisting, she is required to spend her time in observing the work of some of the best teachers in the city. She spends two or three days with the same teacher, writing out in full a lesson plan of each branch taught in that grade. The training teacher reads all these plans, discusses them in class, and answers such questions as the training class may ask regarding the work observed.

One hour each day is given to class recitation in the training school throughout the entire year. During the year, thirty-five hours are given to psychology, forty hours to school management, twenty hours to the history of education, thirty-five hours to public-school music, and the remaining time, about fifty-five hours, to lectures and discussions by the training teacher on methods of teaching the various subjects in the first four grades.

The two classrooms under the supervision of the training teacher are adjacent, so that the work of the apprentice-teachers can be easily observed and, if not well done, corrected before any harm is done to the children in the school.

After completing the year's work in the training school, the apprentice-teachers are appointed by the superintendent to regular and substitute positions in the instruction corps, according to the degree of proficiency shown in the training class and attested by the results of the city teachers' examination.

In my judgment this experiment may be regarded as having been very successful in this city. The children are taught fully as well in the training school as in other rooms of the same grades throughout the city. In fact, better results are often secured there than else-

where, so far as the children are concerned. In the course of my term as superintendent, I have had the opportunity to try out a number of groups as regular teachers, made up of those who had served the apprenticeship in the training school. I have discerned in my regular visits of inspection to the schools under their charge ample evidence in their teaching that they have profited largely by that apprenticeship. We are greatly pleased with the results of the experiment and intend to continue the plan.

A HOME GEOGRAPHY LESSON FOR A CITY SCHOOL

HOW THE PEOPLE OF A LARGE CITY ARE SUPPLIED WITH WATER

R. C. PECK
McKinley Manual Training School, Washington, D.C.

[The following article comprises the notes on a lesson which has been used in elementary science in the first semester's work in the high school. It is typical of the attempt which is being widely made in the elementary science work of both the high school and the elementary school to correlate and unify the various branches of science by basing the lessons upon concrete situations. The lesson here described shows in detail how one particular situation may be used as an occasion for the discovery and application of laws of physics, biology, economics, geology, etc. It may serve as an example, not to be followed in detail, but to furnish a stimulus to each science teacher to work out his own problem so as to meet the needs of his community.—EDITOR.]

When hunters are choosing a site for camp, they try to find one near a spring or stream of clear water and this is one of the things the early settlers always had to think about when they built their cabins and made their clearings. When the water of the spring was not easy to dip up, it was found a great help to dig a hole and set a barrel in it with the bottom knocked out. This kept the dirt from filling the hole and made a deep hollow which soon filled up with clear water. If no spring was convenient, they sometimes reached underground water by digging the holes deeper and lining them with stones. Thus every farm house had its own spring or well.

Would you like to live in a city that had to depend on such wells? What inconvenience would this cause us, especially when the well was deep? Are shallow wells safe, especially when a stable is near?

In villages people often have high tanks which they fill by means of pumps which are driven by windmills or engines of some sort. From these tanks the water runs to the faucets in pipes, the pressure of the water outside pushing that within the house up as high as the water in the tank. (Illustrate with a funnel with tube and nozzle attached.) Would this do for a large city? Would the water rate your father pays dig such a well and buy an engine and pump? Could several neighbors save expense by building

one large tank together? Could a tank be built large enough for a whole town? What is a standpipe?

Tanks large enough to supply a town with water are sometimes built, but if there are hills, there is a better way. What could a farmer do if he had a hill full of springs near his house? Is there a large reservoir in your city? Is it in the upper or lower part of the town? How is it kept full of water?

What never-failing source of water supply has Washington near at hand? Is the Potomac River water at the wharves fit to drink? Would it not be a great saving of expense if we could get the water into the reservoir without pumping it? Would we have to go far upstream to find the water as high as most of the city? Why are there so many locks in the canal which skirts the river? Why are there so many rapids? Where is the descent so rapid that locks had to be built even in Washington's time to let the flat boats get up the river?

In Roman times great cities were often supplied by aqueducts or overhead canals bringing the water from some distant mountain lake or river. Some such idea seems to be suggested in a little book written by the private secretary of George Washington, in which it is proposed to bring the water from above Great Falls by a canal kept high up back among the hills and then extended out over the city. May not Washington have had this in mind in choosing the site of the city? Nothing was done about it until shortly before the Civil War when a conduit or covered canal was built, sometimes by tunneling through the hills and in one place by crossing a stream at Cabin John Bridge. The canal ended in the Macmillan Park reservoir, from which the water is drawn to be filtered and distributed to the city.

A comparison with the water-supply of other cities naturally follows, especially with those similarly located on the "fall line." Interest is aroused in the cause of the remarkable change in the character of the river and surrounding country at Washington, and in the historical geology of the region. Opportunity for the discussion of a number of economic and social problems is given. A further study of the filtration problem introduces the question of disease prevention, and the pumping plant and distribution system prepares the way for some elementary physics.

BOOK REVIEWS

Story Telling in School and Home. By EMELYN NEWCOMB PARTRIDGE and GEORGE EVERETT PARTRIDGE. New York: Sturgis & Walton Co. Pp. 319. $1.25.

One author has selected a large number of well-chosen children's stories; the other has evolved the elements of a science of story-telling. The book is exceedingly helpful and suggestive for grade teachers and for mothers.

The Swallow Book. By DR. GUISEPPE PITRE, University of Palermo. Translated by ADA WALKER CUMEHL. New York: American Book Co. Pp. 158. $0.35.

This supplementary reader for the upper grammar grades consists of an introductory chapter describing the swallow, followed by a collection of interesting myths, legends, fables, folk-songs, proverbs, and superstitions of many lands about swallows. The aim is to teach the story of this particular bird and to cultivate the imagination and the power of observation of the reader.

A Dickens Dramatic Reader. By FANNY COMSTOCK. Boston: Ginn & Co. Pp. 338. $0.60.

In this book the author has dramatized many scenes from the *Pickwick Papers*, *Nicholas Nickleby*, *The Cricket on the Hearth*, and *A Christmas Carol*. Stage directions are full and explicit; but the characters speak the language Dickens gave them. With the possible exception of Pickwick, the works chosen are the most appropriate of Dickens for junior readers. The dramatic form, eliminating as it does much description, serves as an attractive introduction to young readers.

Primary School Reader III. By WILLIAM H. ELSON. Chicago: Scott Foresman & Co. Pp. 287. $0.45.

A primary reader with many fresh stories. The grouping is especially suggestive. The tales are grouped as follows: Fairies, Fables, Folk Tales, Children, Legends, Festivals, Patriotism, Heroes, Nature, Fairy Tales.

Little Dramas for Primary Grades. By ADA MARIA SKINNER and LILLIAN NIXON LAURENCE. New York: American Book Co. Pp. 176. $0.35.

Plays for the third school year derived largely from well-known prose and poetical selections. The plays may be acted by the children or may be used simply as reading-lessons. The book is well illustrated for children.

Stories from the Far East. Translated by ROLAND G. KENT and I. FREEMAN HALL. New York: Charles E. Merrill Co. Illustrated. Pp. 153. $0.30.

A unique story book. The stories are two thousand years old, translated from the Sanskrit, each dealing with some sort of animal life. The book is suitable for the lower grades and for the nursery.

Southern Literary Readings. Edited by LEONIDAS WARREN PAYNE. Chicago: Rand McNally & Co. Pp. vii+487. $0.75.

A reader for grades 7 to 11, selecting the best in southern literature that is suited to the interests of young readers. This is a book that should find wide use in the public schools of the South. The full notes make this book suitable even for classes in college English.

The Dramatic Method of Teaching. By HARRIET FINLAY JOHNSON. Edited by ELLEN M. CYR. Boston: Ginn & Co. Pp. v+199. $1.00.

This book ought to be in the hands of every elementary-school teacher. It is a vigorous exposition of vitalizing methods which are rapidly making their way into our schools. The characters of history, of literature, are made to live again in the eyes of the children.

The Second Book of Stories for the Story Teller. By FANNY E. COE. Boston: Houghton Mifflin Co. Pp. iii+209. $0.80.

A book full of delightful stories well selected for variety and interest: folk tales, modern fairy tales, myths, and stories from real life make up the contents. The *moral virtues* are emphasized by the subject-matter.

The Jatakas, Tales of India. Retold by ELLEN C. BABBITT. New York: Century Co. Pp. vii+92. $0.40 net.

Miss Babbitt has selected some of the tales of the sacred books of the Buddhists, and retold them in style suitable for children. A distinctive feature of the book is the method of illustration. It includes forty-two illustrations in silhouette by Ellsworth Young.

R. L. LYMAN

UNIVERSITY OF CHICAGO

The Posture of School Children. By JESSIE H. BANCROFT. New York: Macmillan. Pp. xii+327. $1.50.

At first thought it seems impossible to fill a book with a discussion of this subject and not deal with technical details. Yet when you turn over the twelve pages of bibliography at the close of the volume, citations of titles that deal with varying phases of it, the manifold bearings of posture on health and efficiency are apparent at a glance. "Erect carriage of the body is necessary (1) for full vigor and health, (2) to prevent waste of energy in maintaining the upright position in any of the activities of life, (3) with children, to admit of proper growth and development." In chap. ii, on "How

to Judge of Correct and Incorrect Posture," the vertical line test is advocated: "The long axis or diameter of the trunk of the body is a perfectly vertical line; the long axis of the neck and head taken together is also a vertical line. In poor postures the axes of these main segments of the body, instead of forming one continuous, vertical line, are broken into two or three zigzag lines." To assist the eye in detecting these poor postures "a line may be dropped from the front of the ear to the forward part of the foot." The long axes of head, neck, and trunk should parallel this vertical line. The directions for assuming the correct standing position are simple: "Stretch the arms directly sidewise at shoulder level, with the palms turned downward, and holding the arms there, sway forward from the ankle so that the weight is nearly or quite over the balls of the feet, not, however, rising on the toes, but keeping the heels on the ground." Draw the chin inward. Keep head, chest, and shoulders as this places them and drop the arms to the side. This will leave the body in correct standing position. Attention is called in chap. iii to the fact that man in the course of his evolution has only recently (speaking in geological terms) learned to assume the erect position. There are still many of his anatomical features that make it a difficult task. Hence the necessity for teaching children how to do it. Chapters iv–x inclusive discuss the correct attitudes of spine, head, chest, shoulders, abdomen. Chaps. xiii and xiv are on methods of correcting poor posture; xv on the hygiene of posture. Then several chapters are devoted to achieving correct postures of children in school, and the hygiene of school postures. Many illustrations are repeated in the book, and considerable subject-matter. The impression is left that the book might have been condensed without losing any of its value. Otherwise it is a valuable presentation of an important matter. Not the least valuable part of it is the appendix in which are quoted summaries of several recent investigations of attitudes, dress, and pathological results of wrong postures.

An Introduction to the Study of Social Evolution, the Prehistoric Period. By F. STUART CHAPIN. New York: Century Co. Pp. xxii+306. $2.00.

"The object of this book is to present in elementary form a summary of the most generally accepted evidence and theory of social evolution." The book opens with a presentation of some of the biological evidences of man's evolution and of a modified Darwinism as the probable method. The book shares the fault of all social and educational works that attempt to present a biological foundation. Biology advances with such rapidity that before chapters can be printed they are erroneous. Thus on p. 8 in discussing variation the author says: "A consistent increase in asymmetry or skewness of the curve . . . . must mean that the species is moving in a definite direction." This in connection with a discussion of the heights of American school boys. Now we know that Johannsen's work on pure line cultures quite discredits such an interpretation. The author adopts Darwinism. "This in brief is Darwin's famous doctrine of the origin of species by descent under the influence of natural selection. It is the core of the theory of evolution." He is aware of de Vries's work and Mendel's results and discusses them, but does not appear to realize their bearing upon modern biological thought. To avoid the difficulty of the non-inheritance of acquired characters, he adopts the antiquated theory of organic selection. Orthogenesis is apparently an unconsidered possibility. With so weak an introductory discussion of the biological factors involved, a biologist hesitates to commend in point of accuracy the rest of the

book. It is interesting, however, and stimulating. The chapter (iii) on the origin and antiquity of man includes Dawson and Woodward's discovery at Pittdown, England, in 1912, of the skull fragments of a man, and this whole chapter is very clearly and ably written. Through the Paleolithic and Neolithic ages man is traced by the remains of his utensils and implements, his dwellings and monuments. The remainder of the book deals rather with mental and social evolution than with the material basis. Chap. iv is on associations, showing how gregariousness produced necessary changes in social structures. Chap. v deals with the influences of environment on society and the direction of historic events. Chap. vi deals with social heredity. Chap vii, one of the most interesting chapters, traces the origin of races. The author adopts Giddings' notion that the white race "is the variable plastic race coming down from the earliest paleolithic times." From maps showing present distribution of the races there appears to be a zone extending from Java on the southeast to the valley of Thames on the northwest which marks their separation and which also includes the regions where have been found the remains of the primitive races. This seems the probable original habitat of primitive man. Finally, chaps. viii and ix deal with tribal society and the transition from this to the modern social organization. On the whole, the book is an attractive presentation of man's social progress from the beast that has just arrived at human level to man who begins to make history. Its accuracy is all that could be expected in a book dealing with such unsettled matters.

E. R. D.

UNIVERSITY OF CHICAGO

The Marking System in Theory and Practice. By J. E. FINKELSTEIN. ("Educational Psychological Monographs.") Baltimore: Warwick & York, 1913. Pp. 2+88. $1.00.

A brief theoretical discussion of the marking system and a display of the distribution of a large number of marks given in Cornell University. Among the distinctive conclusions of the author are the belief that the marks should be based upon accomplishment (performance in examinations plus other evidence of the student's real knowledge or skill) rather than ability; that effort or zeal is to be regarded as a separate factor from ability and as one which when present produces a proportionately greater effect in the upper than in the lower ranges; and that as a consequence of these facts and of the fact that greater incentive to effort is present in the case of the mediocre than of the superior student, the curve of distribution should be skewed to the right. To the reviewer it would appear that the assumed disproportionate effect of effort and the different power of incentives with poorer and better students should neutralize rather than reinforce each other. Many interesting and typical illustrations of deviations in practice in the marking of different instructors or departments are given.

F. N. F.

BOOKS RECEIVED

AMERICAN BOOK CO., CHICAGO

Die sieben Reisen Sinbads des Seemannes. By ALBERT LUDWIG GRIMM. Edited with notes, exercises, and vocabulary by K. C. H. DRECHSEL, A.M. Cloth. Illustrated. Pp. 188. Price $0.40.

John Bunyan's Dream Story. By JAMES BALDWIN. Cloth. Illustrated. Pp. 198. Price $0.35.

Kwahu: The Hopi Indian Boy. By GEORGE NEWELL MORAN. Cloth. Illustrated. Pp. 237. Price $0.50.

The Art of Writing English. By ROLLO WALTER BROWN and NATHANIEL WARING BARNES. Cloth. Pp. 382. Price $1.20.

LITTLE, BROWN & CO., BOSTON

Colette in France. By ETTA BLAISDELL MCDONALD. Cloth. Illustrated. Pp. 120. Price $0.45.

Indian Child Life. By CHARLES A. EASTMAN (OHIYESA). Cloth. Illustrated. Pp. 160. Price $0.50.

Twilight Town. By MARY FRANCES BLAISDELL. Cloth. Illustrated. Pp. 173. Price $0.40.

The Wide Awake Fourth Reader. By CLARA MURRAY. Cloth. Illustrated. Pp. 329. Price $0.50.

THE MACMILLAN CO., NEW YORK

The Facts about Shakespeare. By WILLIAM ALLAN NEILSON, PH.D., and ASHLEY HORACE THORNDIKE, PH.D., L.H.D. Cloth. Pp. 273. Price $0.60.

Principles of Secondary Education. Vol. I. *Basic Ideals: The Studies.* By CHARLES DE GARMO. Cloth. Pp. 338. Price $1.00 net.

ORANGE JUDD CO., NEW YORK

Soils and Crops. By THOMAS FORSYTH HUNT and CHARLES WILLIAM BURKETT. Cloth. Illustrated. Pp. 541.

UNIVERSITY OF PITTSBURGH, PITTSBURGH

Psychological Aspects of the Problem of Atmospheric Smoke Pollution. By J. E. WALLACE WALLIN, PH.D. Paper.

TEACHERS COLLEGE, NEW YORK

School Health Administration. By LOUIS W. RAPEER, M.A., PH.D. Cloth. Pp. 360. Price $2.15.

THE W. E. RICHARDSON CO., CHICAGO

The Montesorri Manual. By DOROTHY CANFIELD FISHER. Cloth. Pp. 126. Price $1.25 net.

CURRENT EDUCATIONAL LITERATURE IN THE PERIODICALS[1]

IRENE WARREN
Librarian, School of Education, University of Chicago

Army and navy condemnation of football. Lit. D. 47:941. (15 N. '13.)

Backward children and forward teachers. A symposium. Train. School M. (N.J.) 10:97–104. (N. '13.)

Bidwell, Alice T. A course in letter-writing. English J. 2:562–66. (N. '13.)

Bobbitt, J. F., Boyce, A. C., and Perkins, M. L. Literature in the elementary curriculum. El. School T. 14:158–66. (D. '13.)

(A) book-mark to save eyesight. Lit. D. 47:1003. (22 N. '13.)

Bostwick, Arthur E. The making of an American library. III. Bookman 38:399–404. (D. '13.)

Brown, Horace G. Efficiency in teaching by pictures. Educa. 34:171–78. (N. '13.)

Canby, Henry Seidel. The luxury of being educated. Harper 128:68–74. (D. '13.)

Carpenter, D. F. Mental age tests. J. of Educa. Psychol. 4:538–44. (N. '13.)

Child-life in Palestine. Liv. Age 269:437–41. (15 N. '13.)

(A) Chinese Helen Keller. Lit. D. 47:876–77. (8 N. '13.)

Churchman, P. H. The place of study on the curriculum. Pop. Sci. Mo. 83:567–80. (D. '13.)

Coover, J. Edgar. The Union High School questionnaires. Educa. 34:153–61. (N. '13.)

(The) Daniel Boone idea in education. A school system based on voluntary work. Sci. Am. 109:361, 370–71. (8 N. '13.)

Eliot, Charles W. Governmental mothering. Harp. W. 58:14. (15 N. '14.)

Fee, Mary Helen. Teaching English to Filipinos. English J. 2:539–45. (N. '13.)

Freeman, Frank N. Some practical studies of handwriting. El. School T. 14:167–79. (D. '13.)

Gosling, Thomas Warrington. Tobacco and scholarship. School R. 21: 690–93. (D. '13.)

[1] *Abbreviations.*—Atlan., Atlantic Monthly; Educa., Education; El. School T., Elementary School Teacher; English J., English Journal; Harp. W., Harper's Weekly; J. of Educa. Psychol., Journal of Educational Psychology; Lit. D., Literary Digest; Liv. Age, Living Age; Pop. Sci. Mo., Popular Science Monthly; Psychol. Clinc., Psychological Clinic; School R., School Review; Sci. Am., Scientific American; Train. School M. (N.J.), Training School Magazine (New Jersey); U.S. Bur. of Educa. Bull., United States Bureau of Education Bulletin.

Grady, William E. Measuring efficiency of instruction. Psychol. Clinic 7:145–52. (N. '13.)

Hoffman, Frederick L. Some vital statistics of children of school age. School R. 21:657–69. (D. '13.)

Huey, E. B. The education of defectives and the training of teachers for special classes. J. of Educa. Psychol. 4:545–50. (N. '13.)

Inaccessible museums. Lit. D. 47:1005–6. (22 N. '13.)

Locard, Frederic. The study of French in the public high schools of the United States. School R. 21:682–89. (D. '13.)

Mauller, C. T. A solution for public speaking in the high school. Educa. 34:162–68. (N. '13.)

Melbourne, Margaret. Children and the theatre. Home Progress 3:68–71. (O. '13.)

Miller, Kelly. Moral pedagogy. Educa. 34:133–44. (N. '13.)

Minnick, J. H. An experiment in the supervised study of mathematics. School R. 21:670–75. (D. '13.)

Moore, Charles Leonard. On education. Dial 55:395–97. (16 N. '13.)

Parker, S. Chester. Bibliographies, briefs, and oral exposition in normal schools. English J. 2:546–50. (N. '13.)

Paton, Stewart. The essentials of an education. Science 38:758–62. (28 N. '13.)

Reavis, W. C. The interests of children of the primary and intermediate grades in the use of color. El. School T. 14:180–86. (D. '13.)

Rihbany, Abraham Mitrie. At the feet of my teachers. Atlan. 112:791–801. (D. '13.)

Scott, Colin A. General intelligence or "school brightness." J. of Educa. Psychol. 4:509–24. (N. '13.)

Shall we harden our children? Lit. D. 47:942. (15 N. '13).

Starch, Daniel, and Elliott, Edward C. Reliability of grading work in history. School R. 21:676–81. (D. '13.)

Strong, Frank. Some educational problems in Kansas. Science 38:730–34. (21 N. '13.)

Taft, L. E. The recitation as a factor in producing social efficiency. Educa. 34:145–52. (N. '13.)

Thorndike, Edward L. Notes on the significance and use of the Hillegas scale for measuring the quality of English composition. English J. 2:551–61. (N. '13.)

Winch, W. H. Experimental researches on learning to spell. J. of Educa. Psychol. 4:525–37. (N. '13.)

Wolcott, J. D., ed. Monthly record of current educational publications. U.S. Bur. of Educa. Bull., 1913, No. 45. (N. '13.)